

What is claimed is:

1. A cathode ray tube comprising:
a panel having phosphor screen formed on the inner surface thereof;
a funnel joined to the panel and having a body portion, a yoke portion and
5 a neck portion; and an electron gun mounted to the neck portion of said funnel;
wherein
a projection is provided between a seal line plane and the neck portion of
the funnel.
2. The cathode ray tube of claim 1, wherein
10 said projection is provided a sealing portion of the body portion and the
yoke portion of said funnel together.
3. The cathode ray tube of claim 2, wherein
a maximum thickness T_{max} and a minimum thickness T_{min} of a cross
section of said projection satisfies:
15 $1.5 \leq T_{max}/T_{min} \leq 4.0$.
4. The cathode ray tube of claim 2, wherein
a thickness of said projection is greater than a thickness of the body
portion of the funnel:
5. The cathode ray tube of claim 4, wherein
20 both sides of said projection at the outer surface of said funnel have stairs.
6. The cathode ray tube of claim 4, wherein
both sides of said projection at the outer surface of said funnel have
curvature.
7. The cathode ray tube of claim 1, wherein

a thickness of said funnel except the projection becomes gradually greater from the neck portion to the seal line plane.

8. The cathode ray tube of claim 1, wherein
said panel and said funnel satisfy:

5 USD/PT ≥ 2.5

wherein USD is a diagonal length of an effective screen of the panel, and
PT is a distance between a central point of an inner surface of said panel and the
yoke line plane.

9. The cathode ray tube of claim 8, wherein

10 a deflection angle of the electron beams is no less than or equal to 100°.

10. The cathode ray tube of claim 8, wherein

a cross section of the neck portion is shaped non circular.

11. The cathode ray tube of claim 9, wherein

a cross section of the neck portion is shaped non circular.

15 12. The cathode ray tube of claim 1, wherein

a deflecting angle of the electron beams is no less than or equal to
100°.

13. The cathode ray tube of claim 12, wherein

a cross section of the neck portion is shaped non circular.

20 14. The cathode ray tube of claim 1, wherein

a cross section of the neck portion is shaped non circular.

15. The cathode ray tube of claim 1, wherein

said funnel satisfies:

$Tt/Ts \geq 0.9$, $Tt/Tn \geq 1.0$, $Tt \geq 0.7\text{mm}$

wherein A is a plane which is 30mm apart from yoke line plane to neck portion, B is a plane which is 40mm apart from the yoke line plane to the screen, and

5 T_n is a thickness of said funnel at a position between A and the yoke line plane, T_t is thickness of said funnel at the B, and T_s is a thickness of said funnel at a position between the yoke line plane and the B.